AMENDMENT

In the Claims:

These claims replace all prior versions and listings of claims in the above-referenced application.

---

1   1.   (Currently Amended) A data communication system, comprising:

2   a number of nodes interconnected in a network, the nodes including a source

3   node, a destination node, and at least one intermediate node, wherein each of the nodes

4   include an ingress port and an egress port; and

5   source logic in the source node to identify a data route from the source node to

6   the destination node through the at least one intermediate node, the data route being

7   communicated to each subsequent node in the data route via a data packet header

8   comprising an egress port of a next subsequent node, a current hop count, and a total

9   number of hops in the data route, wherein each subsequent intermediate node includes

10   routing logic configured to route a data packet associated with the data packet header in

11   response to the egress port independent of the state of a routing table associated with the

12   node.

1   2.   (Previously Presented) The system of claim 1, further comprising:

2   return routing logic in each subsequent intermediate node configured to insert an

3   ingress port indicator into the data packet header, the indicator responsive to the port

4   where the data packet was received.

1   3.   (Previously Presented) The system of claim 1, further comprising a

2   routing table located in the source node, the routing table containing at least one data

3   route from the source node to the destination node.

1   4.   (Previously Presented) The system of claim 1, wherein the routing logic

2   further comprises logic to decrement the current hop count.

1   5.   (Previously Presented) The system of claim 1, further comprising

2 destination logic in the destination node configured to swap the ingress port indicator

3 with the egress port in the data packet header of the data packet in response to the

4 condition when the current hop count exceeds a threshold value.

1   6.   (Previously Presented) A data communication system, comprising:

2   a number of nodes interconnected in a network, the nodes including a source

3 node, a destination node, and at least one intermediate node, wherein each of the nodes

4 include an ingress port and an egress port;

5   path identification means in the source node for identifying a data route from the

6 source node to the destination node through the at least one intermediate node, the data

7 route being communicated to each subsequent node in the data route via a data packet

8 header comprising an egress port of a next subsequent node, a current hop count, and a

9 total number of hops in the data route, wherein each subsequent intermediate node

10 includes routing means configured to route a data packet associated with the data packet

11 header in response to the next subsequent node's egress port independent of the state of a

12 routing table associated with the node; and

13   destination means in the destination node for detecting the arrival of a data packet

14 designated for ~~at~~ the destination node.

1   7.   (Previously Presented) The system of claim 6, further comprising:

2   return routing means in each subsequent intermediate node for recording an

3 ingress port indicator responsive to the port where the data packet was received.

1   8.   (Previously Presented) The system of claim 6, further comprising a

2 routing table located in the source node, the routing table containing at least one data

3 route from the source node to the destination node.

1   9.   (Previously Presented) The system of claim 6, wherein the routing means

2 further comprises means for decrementing the current hop count.

1   10.   (Previously Presented) The system of claim 7, wherein the return routing

2   means further comprises means for swapping the ingress port indicator with the egress

3   port and replacing the current hop count with the total number of hops responsive to said

4   destination means.

1   11.   (Previously Presented) A method for data communications, comprising

2   the steps of:

3   generating a data packet to transmit from a source node to a destination node

4   through at least one intermediate node in a network;

5   identifying a data route from the source node to the destination node through the

6   at least one intermediate node, the data route being communicated to each subsequent

7   node in the data route via a header associated with the data packet, the header comprising

8   an egress port of a next subsequent node, a current hop count, and a total number of hops

9   in the data route;

10   routing the data packet along the data route in response to the egress port

11   independent of the state of a routing table associated with the node; and

12   detecting the arrival of the data packet at the destination node.

1   12.   (Previously Presented) The method of claim 11, further comprising the

2   step of:

3   recording an ingress port indicator responsive to the port of the respective

4   subsequent node where the data packet was received along the data route.

1   13.   (Previously Presented) The method of claim 11, wherein the step of

2   identifying a data route from the source node to the destination node through the at least

3   one intermediate node further comprises the step of examining a routing table located in

4   the source node, the routing table containing at least one data route from the source node

5   to the destination node.

1   14.   (Previously Presented) The method of claim 11, wherein the step of

2   routing the data packet along the data route further comprises the step of decrementing

3   the current hop count.

1 15. (Previously Presented) The method of claim 12, further comprising the
2 step of replacing the ingress port indicator with the egress port in the data packet header
3 of the data packet in response to the condition when the current hop count falls below a
4 threshold value.

1 16. (Currently Amended) A method for data communications, comprising:
2 providing a network having a plurality of nodes, the plurality of nodes comprising
3 at least a source node and a destination node;
4 using a source node to identify a preferred data route for transferring data from
5 the source node to the destination node;
6 generating a data packet having a header comprising an egress port indicator, a
7 current hop count, and a total hop count, the data packet responsive to the preferred data
8 route;
9 routing the data packet along the preferred data route in accordance with the
10 egress port indicator added to the header by the previous node along the data route and
11 the current hop count, wherein routing is accomplished independent of the state of a
12 routing table in a node along the data route; and
13 changing ~~decrementing~~ the current hop count.

1 17. (Previously Presented) The method of claim 16, further comprising:
2 using the current hop count to detect when the data packet has arrived at the
3 destination node.

1 18. (Canceled)

1 19. (Previously Presented) The method of claim 16, further comprising:
2 inserting an ingress port indicator in the data packet header.

1 20. (Previously Presented) The method of claim 19, further comprising:
2 acknowledging receipt of the data packet at the destination node by resetting the
3 current hop count to the total hop count and swapping the ingress port indicator with the
4 egress port indicator.

1   21.   (Previously Presented) The method of claim 20, wherein acknowledging

2 receipt is accomplished independent of the state of a routing table in the destination node.

1   22.   (Previously Presented) The method of claim 21, wherein acknowledging

2 receipt further comprises routing the data packet back to the source node.

1   23.   (Canceled)

1   24.   (Previously Presented) The method of claim 20, wherein acknowledging

2 receipt further comprises checking for a timeout.

1   25.   (Previously Presented) The method of claim 24, further comprising:

2   using the source node to identify a next best data route for transferring data from

3 the source node to the destination node in response to the timeout; and

4   generating a replacement data packet having an egress port indicator a current hop

5 count, and a total hop count, the data packet responsive to the next best data route.